

## **Abstract**

Transmission spectrometers require low levels of background light so that the signal to noise ratio is increased, and also require stable performance  
5 over wide temperature ranges. Light reflected by the transmission grating can result in increased background levels. One approach to reducing the background level is to orient the transmissive diffraction grating so that light reflected by the grating is reflected out of the diffraction plane. The temperature-induced wavelength drift of a transmission spectrometer can be  
10 due to the frame upon which the transmission grating is mounted. The wavelength drift is reduced by allowing the thermal expansion of the grating to be independent of the frame.